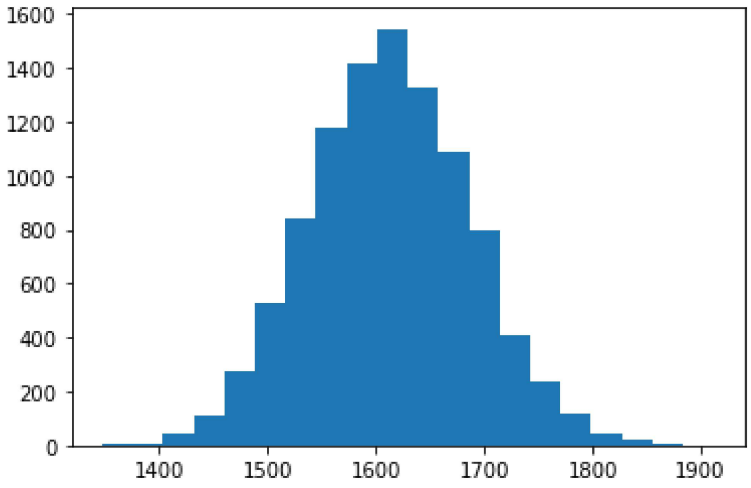
In [1]:
```
import math
from matplotlib import pyplot
import random
```

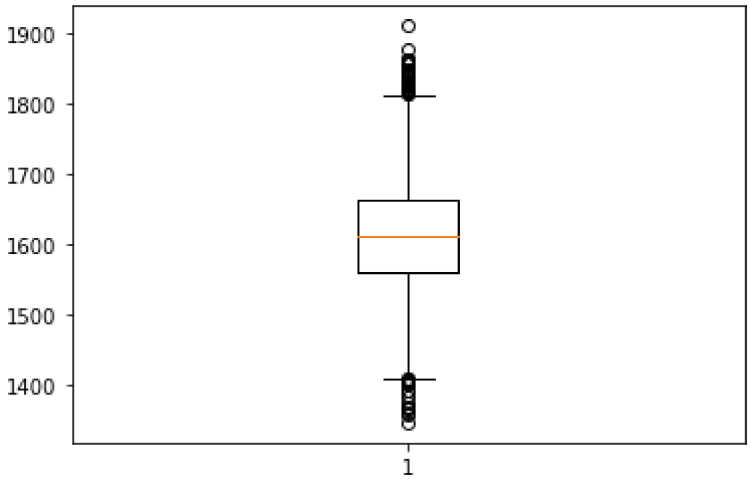
In [2]:
```
def Interest_normal(principal):
    rate=random.normalvariate(0.03,0.015)
    return principal*rate
```

In [3]:
```
years=10
sims=10000
end_balance=[]
for i in range(sims):
    time=0
    balance=1200
    while(time<years):
        balance+=Interest_normal(balance)
        time+=1
    end_balance.append(balance)

pyplot.hist(end_balance, bins=20)
pyplot.show()
```



In [4]:
```
pyplot.boxplot(end_balance)
pyplot.show()
```



In [5]:
```
import pandas as pd
import numpy as np
import seaborn as sns
```

In [6]:
```
employees = pd.read_excel('employee_data.xlsx')
employees.head()
```

Out[6]:

	Employee	Gender	Age	Prior Experience	Beta Experience	Education	Annual Salary
0	1	1	39	5	12	4	57700
1	2	0	44	12	8	6	76400
2	3	0	24	0	2	4	44000
3	4	1	25	2	1	4	41600
4	5	0	56	5	25	8	163900

In [7]:
```
table=pd.crosstab(employees.Education, employees.Gender)
table
```

Out[7]:

Gender	0	1
Education		
0	2	8
2	9	10
4	46	69
6	24	27
8	4	5

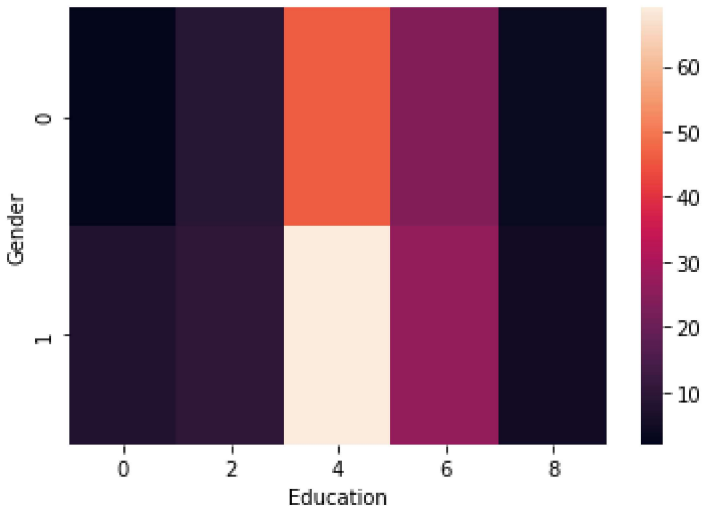
In [8]:
```
table2 = pd.crosstab(employees.Gender,employees.Education)
table2
```

Out[8]:

Education	0	2	4	6	8
Gender					
0	2	9	46	24	4
1	8	10	69	27	5

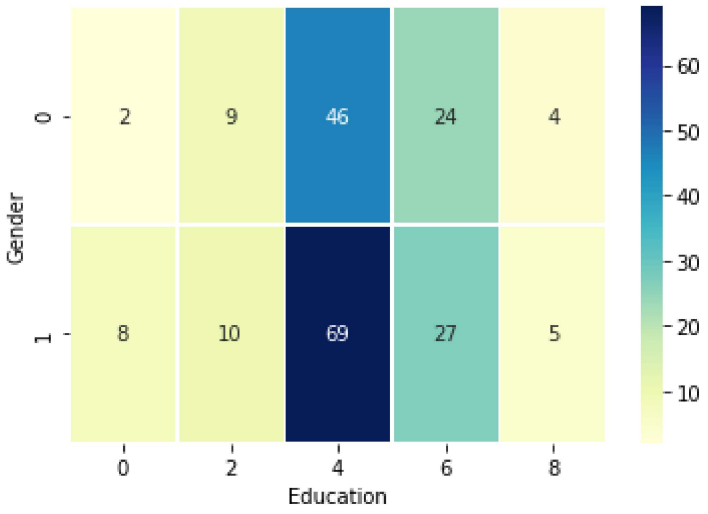
In [9]:
```
sns.heatmap(table2)
```

Out[9]:
```
<AxesSubplot:xlabel='Education', ylabel='Gender'>
```



In [10]:
```
sns.heatmap(table2,annot=True, linewidth=0.5,cmap='YlGnBu')
```

Out[10]:
```
<AxesSubplot:xlabel='Education', ylabel='Gender'>
```



In [11]:
```
dict = {
    'FirstName' : 'Jonathan',
    "Last Name" : 'Freeman',
    "LoginCount" : 4,
    "isWriter" : True,
    'WorksWith' : ['Spantree Technology Group', 'InfoWorld'],
    'Pets' : [{
```

```
        'name' : 'Lilly',
        'type' : 'raccoon'
    }]
}

dict
```

Out[11]:
```
{'FirstName': 'Jonathan',
 'Last Name': 'Freeman',
 'LoginCount': 4,
 'isWriter': True,
 'WorksWith': ['Spantree Technology Group', 'InfoWorld'],
 'Pets': [{'name': 'Lilly', 'type': 'raccoon'}]}
```

In [12]:
```
my_dict = {'Computer': 1500, "Monitor" : 300, "Printer" : 150, "Desk": 250}
my_dict
```

Out[12]:
```
{'Computer': 1500, 'Monitor': 300, 'Printer': 150, 'Desk': 250}
```

In [13]:
```
df=pd.DataFrame(list(my_dict.items()),columns=['Products',"Prices"])
df
```

Out[13]:

	Products	Prices
0	Computer	1500
1	Monitor	300
2	Printer	150
3	Desk	250

In [ ]:
```

```